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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/012,207	11/05/2001	Vibha Goel	11971-012001/	5310
20985	7590	02/23/2006	EXAMINER	
FISH & RICHARDSON, PC P.O. BOX 1022 MINNEAPOLIS, MN 55440-1022			SEDIGHIAN, REZA	
			ART UNIT	PAPER NUMBER
			2633	

DATE MAILED: 02/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/012,207

Applicant(s)

GOEL, VIBHA

Examiner

M. R. Sedighian

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 21 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-13 and 32-37 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 33-37 is/are allowed.
- 6) ☒ Claim(s) 1-13 and 32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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1. This communication is responsive to applicant's 12/21/05 amendments and remarks. Claims 1-13 and 32-37 are now pending.
2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-13 and 32 are rejected under 35 U.S.C. 102(e) as being anticipated by McDermott, III et al. (US Patent No: 6,894,970).

Regarding claims 1 and 32, McDermott teaches a signal switching system (10, fig. 1A), comprising: a signal switching part (for example, FM<sub>1</sub>W, fig. 1A) receiving a plurality of inputs (col. 3, lines 40-50 and Channel 101-0P, fig. 1A) and switching any of the plurality of inputs to any of a plurality of outputs (col. 4, lines 16-19, 66-67, col. 5, line 1), the switching part including a control mechanism (col. 4, lines 6-10); an optical router (for example, Packet Forwarding Module 13-1, fig. 1A) receiving the signals from the outputs, and optically routing the signals (col. 4, lines 17-27), wherein the optical router produces a fault signal (col. 4, lines 29-33, 63-66); and an optical sampling element (13-0 and 307, fig. 3) configured to sample the signals and produce a sample indicative of the fault signal (col. 9, lines 47-52) which is used by the control mechanism to control the switching (col. 4, lines 63-67, col. 5, line 1, col. 9, lines 52-54).

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Regarding claim 2, McDermott teaches the switch part (10, figs. 1A, 1B) includes an  $n$  by  $n$  switch (15-1, fig. 1B and 15, fig. 5), wherein at least a plurality of the channels are redundancy channels (note that some of the input channels can be redundant channels).

Regarding claim 3, McDermott teaches the switching part includes an optical switch (15-1, fig. 1B and 15, fig. 5) having optical lines (col. 12, lines 46-49 and 109-1 and 110-1, fig. 1B).

Regarding claims 4-5, McDermott teaches the switching part includes a  $16 \times 16$  switch, or  $8 \times 8$  switch (note that optical switch 15 has  $n$  inputs and  $n$  outputs, for example it can be an  $8 \times 8$  switch, or a  $16 \times 16$  switch).

Regarding claim 6, McDermott teaches the optical switch includes an optical detecting element (504, fig. 5) which detects a signal on one of the optical lines (col. 11, lines 50-60).

Regarding claim 7, McDermott teaches the signal is formed as an amplitude modulated signal on the optical lines (col. 12, lines 3-8).

Regarding claim 8, McDermott teaches a method, comprising: sending a plurality of channels (col. 4, lines 23-40) to a plurality of routers (13-0, 13-1, fig. 1A and 18-0, 18-1, fig. 1C), wherein the routers have spare capability for failed routers (col. 4, lines 30-40); providing an optical signal from the routers (col. 9, lines 57-60, the optical output signals from routers 13 and 18); and sampling a portion of the optical signal (col. 4, lines 63-67, col. 9, lines 47-50) to determine an error in the routers (col. 4, lines 63-65).

Regarding claims 9, McDermott teaches the optical signal is provided as a modulation on one of the plurality of channels (col. 8, lines 31-45).

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Regarding claims 10, McDermott teaches the optical error signal is amplitude modulated on one of the elements (col. 12, lines 1-5).

Regarding claim 11, McDermott teaches sampling the optical signal is used to control the sending of the plurality of channels (col. 9, lines 47-54).

Regarding claims 12, McDermott teaches the optical signal is an amplitude modulated signal (col. 12, lines 3-8).

Regarding claim 13, McDermott teaches the signal include information indicative of a frequency of the error (col. 9, lines 47-50).

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-6, 8, 11, 13, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chiu et al. (US Patent Application Publication No: 2002/0063916 A1).

Regarding claims 1 and 32, Chiu teaches a signal switching system (page 2, paragraph 0031), comprising: a signal switching part (OXC<sub>B</sub>, fig. 3) receiving a plurality of inputs and switching any plurality of inputs to any plurality of outputs (page 2, paragraph 0031); an optical router (100<sub>B1</sub>, fig. 3) receiving the signals from the outputs and optically routing the signals (page 3, paragraph 0044), wherein the router produces a fault signal (page 3, paragraph 0045). Chiu differs from the claimed invention in that Chiu does not specifically disclose the switching part includes a control mechanism, and an optical sampling element that can be configured to sample the signals and produce a

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sample indicative of the fault signal to be used by the control mechanism to control the switching. Chiu discloses an  $OXC_B$  (fig. 3) that is connected to routers ( $100_{B1}$ ,  $100_{B2}$ , fig. 3) to transport packets between the routers (page 3, paragraph 0044). Chiu further discloses  $OXC_B$  directly detects the failure and coordinates the setup of the new lightpath link between routers (page 3, paragraph 0045). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention that  $OXC_B$  samples a portion of the optical signal in order to detect the failure to further coordinate a setup of a new lightpath link between the routers to reestablish data transmission and restoration between the routers of the network.

Regarding claim 2, Chiu teaches the switching part is an  $n \times n$  switch (note that  $OXC_B$  is a cross connect switch and obviously it can be a  $n \times n$  switch) and having  $n$  channels, wherein a plurality of the  $n$  channels are redundancy channels (it is well known that some channels of an OXC can be redundant channels).

Regarding claim 3, Chiu teaches the optical switch have optical lines (page 3, paragraph 0044).

Regarding claims 4-5, Chiu teaches the switching part is a  $16 \times 16$ , or  $8 \times 8$  optical switch (it is well known that an OXC switch such as  $OXC_B$  can be a  $8 \times 8$ , or a  $16 \times 16$  switch).

Regarding claim 6, Chiu teaches the optical switch includes an optical detecting element, which detects a signal on one of the optical lines (the  $OXC_B$  detects failure, and therefore, it would have been obvious that  $OXC_B$  includes an optical detecting element to detect a signal on one of the optical lines).

Regarding claim 8, Chiu teaches a method comprising: sending a plurality of channels (page 3, paragraphs 0037, 0044 and fig. 3) to a plurality of routers (100<sub>B1</sub>, 100<sub>B2</sub>, fig. 3), where the plurality of routers have spare capability for failed routers (page 3, paragraph 0045); and providing an optical signal from the routers (page 3, paragraph 0044). Chiu differs from the claimed invention in that Chiu does not specifically disclose sampling a portion of the optical signal to determine an error in the routers. However, Chiu discloses an OXC<sub>B</sub> (fig. 3) that is connected to failed router (100<sub>B1</sub>, fig. 3) directly may detect the failure and coordinate the setup of the new lightpath link between routers (page 3, paragraph 0045). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention that OXC<sub>B</sub> samples a portion of the optical signal in order to detect the failure to further coordinate a setup of a new lightpath link between routers to reestablish data transmission and restoration between the routers of the network.

Regarding claim 11, Chiu teaches sampling the optical signals is used to control the sending of the plurality of channels (OXC<sub>B</sub> coordinates the setup of new light path links between routers, accordingly, OXC<sub>B</sub> samples optical signals to further control and route signals along different lightpaths).

Regarding claim 13, Chiu teaches the signal includes information indicative of a frequency of the error (it is obvious that OXC<sub>B</sub> can detect information indicative of a frequency of errors to further coordinate setup of new lightpaths links between routers).

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6. Claims 7, 9-10, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chiu et al. (US Patent Application Publication No: 2002/0063916 A1) in view of Fatehi et al. (US Patent No: 6,600,581).

Regarding claims 7, 9-10, and 12, Chiu differs from the claimed invention in that Chiu does not specifically disclose the optical signal is provided as an amplitude modulation on at least one of the plurality of channels. Fatehi discloses connection verification (see abstract) in an optical cross-connect arrangement (200, fig. 2), wherein amplitude modulation can be used to impress identification information onto the optical signal (col. 3, lines 33-35, col. 6, lines 45-50). As it is taught by Fatehi, it would have been obvious to incorporate a method of amplitude modulation of an optical signal, for the fault recovery and restoration in the optical switching and routing system of Chiu to determine whether the optical signals were routed correctly.

7. Claims 33-37 are allowed over prior art of record.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. R. Sedighian whose telephone number is (571) 272-3034. The examiner can normally be reached on M-F (from 9 AM to 5 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
M. R. SEDIGHIAN  
PRIMARY EXAMINER